

REMARKS

Applicants wish to thank Examiner James A. Thompson for having restated his arguments with great care. Nevertheless, for the reasons detailed below, the Applicants respectfully traverse all of the rejections.

At the same time, however, in the interest of advancing this case toward issue, Applicants have inserted three new dependent claims that are believed to distinguish the cited art considered singly. The detailed reasoning presented below also shows that the cited art is not combinable for purposes of rejecting those three newly presented claims.

Applicants respectfully ask that — in event the Examiner does not deem the reasoning herein to be persuasive — the Examiner telephone the undersigned to seek areas of agreement.

The "Response to Arguments" Section of the Action

This portion of the Official Action, and thus of these Remarks, is directed to rejections under Sections 102 and 103. From a careful study of the "Response to Arguments" it appears that the central points relate to the Applicants' recitation of:

- 1) "incremental" printing, and
- 2) "multielement array" .

These are discussed below. The remaining details in the "Response to Arguments" are taken up in an Appendix to this paper, following the signature page.

(1) "Incremental" printing — Applicants' claim 1 recites an "incremental-printing array", and the present Official Action argues that this fails to distinguish Ohno because Ohno's "printing units do indeed print incrementally." The Action goes on to say that "printing of the register marks at specific locations . . . is an example of . . . printing incrementally" — but the Action does not explain on what basis Ohno's printing of register marks constitutes printing "incrementally".

In other words, the argument is a mere assertion, without principled reasoning in support. The Action also goes on (emphasis added) :

"An example of incremental printing is further demonstrated in figure 4 of Ohno. As can clearly be seen . . . the register marks are printed incrementally"

Here too, there is no support, only a conclusionary allegation. What is more, the word "further" is inapposite here since the example stated is merely the identical previous example repeated.

With respect, both instances of this asserted example appear at odds with the accepted understanding of the phrase "incremental printing" in this field. As is well known in this field, incremental printing is performed by a computer or a printer processor stage that operates directly from a computer data file and works out the details of dots to be printed, as the process goes along.

In other words, incremental printing operates by computing the image (1) color balance, (2) rendering and (3) print-masking — or at least the latter two of these functions — concurrently with the actual deposition of the ink. This data processing most especially stays just immediately ahead (i. e. typically MOMENTS ahead) of the marking mechanisms.

The above conceptualization of "incremental printing" follows generally at least one issued patent that is indirectly incorporated by reference into the present application. That patent, U. S. 6,270,185, is one of the so-called "companion documents" of several coowned applications which are incorporated by reference directly — as stated on page 1 of the present specification, at lines 22 through 30.

Discussing a particular incremental-printing system, the '185 patent plainly identifies "incremental printing" with dot-matrix, inkjet, and related technologies that function as above described. The patent mentions that the particular (emphasis added) —

"incremental-printing apparatus . . . includes some means for establishing a pixel grid

" . . . [T]hese means will be called simply the 'establishing means'. The apparatus also includes some means for addressing marks of a single particular ink type to all pixels of the grid — . . . the 'addressing means'.

"As is well known in the field of incremental printing a great number of equivalent 'means' for establishing a pixel grid, and addressing marks, are available. These include the entire technologies of dot-matrix (i. e. mechanical-pin), inkjet, bubblejet, hot-wax transfer, xerographic (i. e. laser) and other methods . . . operating on the same general principles. . . .

"Such technologies nowadays usually include digital electronic processors, as parts of both the establishing and addressing means. These may be in the printer, or may reside in general-purpose computers, operating so-called 'printer drivers' — or may be in separate image processor units connected between a computer and a printer to relieve the computer for other tasks while providing extremely fast processing.

"In any event the establishing and addressing functions may take the form of software such as a printer driver, or a graphics application or a word-processing application; or may take the form of firmware read from a read-only memory (ROM, EPRCM, EEPROM etc.) into a general-purpose processor; or may take the form of processing instructions hard-coded into an application-specific integrated circuit (ASIC)."

It will be apparent that offset-litho systems fail to answer to these descriptions.

Another way to come at this idea is to say that incremental printing proceeds "by construction" of the image "from individual marks" — and indeed this characterization appears in the preamble of claim 1. Thus the preamble is in no way at odds with the body of the claim, but simply supports and reinforces the latter.

The Applicants also respectfully submit that the above-discussed passage of the Official Action is overreaching as it proves too much. Based upon the line of argument in the Official Action, virtually everything is "incremental". Certainly everything that first prints some of an image and then later prints more of it is apparently deemed "incremental". Possibly this excludes letterpress printing, but not much else.

Thus in effect the Action would write the word "incremental" out of the claim. With the greatest of respect, the Applicants submit that that would be neither a meaningful nor a proper way of construing the instant claim language, and accordingly is without authority.

The incremental printing process as described above (i. e., a computer operating essentially in real time during the printing itself, and staying just immediately ahead of the marking mechanisms to work out the details of color balance, rendering and masking) is not necessarily associated with a "multielement array" of marking devices. The concept of such

a multielement array will be more fully introduced, and discussed in greater detail, in section (2) below.

For present purposes, however, it must be mentioned that no such "multielement array" is used in the incremental-printing branch known as "laser printing", or "electrostatic printing", or "xerographic printing". In that type of incremental printing, the computer stays just immediately ahead of a toner-dusting process.

The latter process in turn occurs immediately before the toner is transferred to the printing media. Consequently the computation stage ordinarily occurs only moments ahead of the toner transfer to the media, and these transfer steps most commonly are performed in exactly the same small, desktop-sized printing device as the preceding steps.

Therefore, for patentability purposes, claim recitation of a "multielement array" (discussed below) represents an additional limitation, additive to recitation of incremental printing.

Also, most commonly the steps that characterize incremental printing occur automatically in a combination of printer and personal computer. Those devices are ordinarily operated by a secretary or other writer whose training most commonly includes little or no details of the technological operations of the printing stages.

Thus, incremental printing is a distinctly and even dramatically different field from that of offset lithographic printing, in which the exposure of the litho plate is followed by separate chemical processing — ordinarily in a separate chemical-bath station. Then comes yet another additional step of mounting to the plate-carrying cylinder.

Then follow still further added steps of translational and rotational alignment (as in Ohno). Each of these several steps, furthermore, calls for the skilled attention of a especially trained printing technician.

The foregoing discussion not only distinguishes Ohno but also shows that Ohno is nonanalogous art relative to both the present application and the also-cited patents of Takayanagi and Cobbs. This very important point will be further discussed under a separate heading below.

Nevertheless Applicants' claim 1 even further distances itself from offset-litho technology by explicitly specifying a multielement array — which as shown below is very different from the serial mechanical devices of Ohno and other offset-litho systems, even apart from the fact that Ohno's is a registration system, not a printing system as such.

(2) Multielement array — In the Official Action it is suggested that Ohno teaches, for each color, a "multielement array" (rather than "a single unitary plate"). The argument advanced in the Action on behalf of this proposition is that Ohno's apparatus has other components besides the plates. In particular the Action argues:

"Element 11 of figure 2 of Ohno is actually referred to as a 'printing unit' which comprises several subelements, not merely the rotary cylinders (elements 12 and 13)."

With respect, the quoted argument is simply inapposite to the Applicants' claims. The present specification makes absolutely clear that the phrase "multielement incremental-printing array" refers — as usual — to parallel elements, present in relatively large numbers, never to serial elements that are only e. g. two in number.

More specifically, "multielement . . . array" means a functionally parallel multiplicity of inking elements — most commonly present by the hundreds, and operated independently of one another to construct any arbitrary image. It is not

fair, in view of all these circumstances, to read this phrase instead on two mechanical components, in series — as in Ohno — that apply a unitary, predefined pattern of inking for each color. It is true that the details of Ohno's predefined image can be followed backward in history to a point when they were created, but that is not what the Applicants' claims recite.

The interpretation in the Official Action attempts to write the prefix "multi-" and the word "array" out of the claim, because as thus interpreted everything that is plural must be a "multielement array"! The Applicants submit that this is obviously improper.

Finally, even though limitations in the specification are not imported into the claims — still at least the general character of the features named by particular words is normally preserved in construing claims. For example the word "element" also refers to the entries in the periodic table of the elements, and also to the elements of grammar, and even to Elements of Style, as evidenced by the classic book of the same name (Strunk and White).

It would be absurd to propose that the atomic elements or grammatical elements — or equally Ohno's serially operating cylinders, gears, shafts, and motors — are in any slightest sense functional equivalents, for purposes of patent-claim analysis, to the Applicants' parallel "multielement printing array".

The terminology under discussion here appears in all of the claims, not only the first series as in the previously discussed case of "incremental". The comments under this subsection (2) of the present paper, however, add to the previous showing — under subsection (1) — that Ohno is nonanalogous art with respect to the present application, and as well with respect to the cited patents of Takayanagi and Cobbs. This

point is further discussed, with regard to § 103, under a separate heading below.

The Applicants respectfully note that the only rejections stated in the two Official Actions are rejections which use the words of the claims in meanings that are very clearly not the Applicants' intended meanings. This observation suggests that the Examiner may agree that the instant application presents allowable subject matter, and also that such subject matter is disclosed enablingly and clearly — although evidently not claimed in a manner deemed acceptable.

If this is so, then the Applicants' respectfully invite the Examiner to propose or discuss alternative language that would be deemed adequate to distinguish Ohno, based upon those disclosures.

Nonanalogous art — the § 103 portion of the Action

In this part of the Official Action (pages 15 through 22) it is proposed to defeat the Applicants' claims by combinations of Ohno with Takayanagi or Cobbs, or both. For the two main reasons stated below, the Applicants respectfully traverse and ask that these rejections be withdrawn.

The first reason, as already pointed out, is seen in the fact that Ohno is in the art of offset lithography, an art which is perhaps a half-century old. As described at some length above, this technology operates in very different ways from the mechanisms of the present invention, which are in the art of incremental printing — a much newer art and one that has followed distinctly different paths of development.

Specifically, as noted earlier, offset litho involves several separate, discrete work stations for exposure and then development of negatives — and then plates, and then mechanical mounting of the plates to the printing cylinders, and even after that alignment of the plates to the cylinders. Only this last stage is involved in the Ohno teachings.

Furthermore in offset litho, these procedures are performed as follows. Initially the entire negative (with all its pixels) is formed all at once, based upon whatever input image information is provided. Then, after that is entirely finished, the entire plate (with all its pixels) is formed all at once, based upon the previously all-finished negative.

Next the entire finished plate (with all its pixels) is mounted all at once to a press. After that, the entire plate (with all its pixels) is shifted and/or rotated all at once.

Those separate steps are performed *seriatim* at their separate work stations etc. — by the specially skilled printshop technicians whose expertise is required to make any of this happen. After that, then in each rotation of the press cylinders the two ends of the image are transferred to the printing medium (paper etc.) an extremely tiny fraction of a second apart. In the Official Action it is suggested that this infinitesimal time differential trumps all the previous "all at once" process steps and makes offset lithography a form of "incremental" printing.

In striking contrast, true incremental printing involves virtually no all-at-once processing, and essentially no multiple-station apparatus. The stage of working out the pixel details is incremental, a little bit at a time — and is essentially concurrent with the final application of ink to paper. This latter step too occurs just a little bit at a time.

Even in electrostatic forms of incremental printing, where the arithmetic can (but need not) be all finished before the ink application begins, the time involved in ink applica-

tion is far longer (roughly one or more orders of magnitude longer) than in offset litho — particularly in the newspaper presses that appear to be the environment of Ohno's invention.

In incremental printing all these things go on automatically, with no need for skilled technicians, and in substantially a single small apparatus.

The second reason for Applicants' traversal is that the personnel involved in these two fields are two different corps of people. Not only are the operators different groups of people, but the designers and programmers are also two different groups of people.

This is especially clear from the fact that Ohno is in International Class B41F, and the present technology is in International Class G01D, G06K, or H04N — or at closest B41J. The people who research, design, develop and build these different machines don't commonly talk to each other, or read the same journals, or by and large even see the same patents.

Accordingly the Applicants very respectfully submit that the Official Action espouses a lofty philosophy — namely, that there is no fundamental difference between offset lithographic printing, with the pixels on the plates formed from computer images — and the "incremental printing" field. The invention that the present Applicants seek to patent lies in that latter "incremental printing" field.

The philosophical position adopted by the Action is thus a very high one. It is worthy of an individual whose perspective is very broad and creative, who must be a person of extraordinary skill. Perhaps such a person is a philosopher or a physicist: a person who can see profound commonalities in the face of multiple differences.

The patent-law standard for anticipation and obviousness is not such a person. It is, rather, a person of ordinary

skill in the art, a person who most commonly may be a technician or perhaps a junior designer — a person whose focus is directly upon the problems and known popular solutions that are common in the immediate field, not a distinctly different field even if that different field is theoretically related.

Perhaps instead the person who can see commonalities in offset-litho and incremental printing is a person who has simply run a patent search for certain technical features, without limiting the search based upon the kind of field involved. In particular, the Official Action takes the position that these two technologies are "from the same field of endeavor, namely image printing and correction".

This is simply an after-the-fact, extremely broad-brush attempt to articulate a so-called "field" that spans a huge enough group of fields as to satisfy the objective at hand (namely, rejection). Why stop at "image printing and correction"? Why not say that the "same field of endeavor" is simply "imaging" or "reproduction", or "systems engineering"?

The Applicants respectfully submit that all of these possible articulations are improper. The breadth of perspective of a person who runs a search (especially if it was a computerized search) must be tempered by the statutory standard discussed above — i. e., must be linked to the practical limits of vision of a person who is truly (a) in the art, and (b) of ordinary skill.

Conclusion

In view of the foregoing amendments and remarks, the Applicants respectfully request the Examiner's favorable recon-

sideration and allowance of all the claims now standing in this case.

It is respectfully requested that, should there appear any further obstacle to allowance of the claims herein, the Examiner telephone the undersigned attorney to try to resolve the obstacle.

Respectfully submitted,

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April 12, 2005

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APPENDIX
to the Amendment and Request for Reconsideration

Below are discussions of several additional portions of the "Responses to Arguments" section of the Official Action. The Applicants' representative believes that these points are subordinate to the issues discussed above, in the body of this paper.

As the Examiner has taken the trouble to articulate his interpretations of these matters, however, the Applicants do not mean to suggest that these points are unimportant — or that the Applicants concur in the interpretations stated in the Action. Therefore these points are answered in detail here:

(a) "Image data" — In the Official Action it is said (at page 2) that "Ohno clearly prints based upon image data. The correction of printing registration requires that something be printed"

Applicant of course concurs, and will stand corrected, on the Examiner's point that — if the Ohno apparatus and process are traced back far enough — of course there may be (but are not necessarily) image data involved. Applicant will go still further and agree that Ohno does teach printing of registration marks based upon data that describe those marks.

Applicant's point, however, was of course that Ohno does not print images *per se* — that is, not registration marks but real images that a person wishes to see printed, for purposes of enjoying or being informed by printed materials, i. e. the root reason for printing anything — based directly on image data. Rather, Ohno prints by using printing plates that have

been previously prepared and made up as unitary articles, one for each color.

Thus, apart from the registration marks that are the exclusive subject of Ohno's patent, the preparation of — let us say — "true image" data is no part of the subject matter of that patent. Ohno's closest approach to such topics are a very few scattered references to the words "newspaper" (e. g., column 22, line 12) or "newsprint".

It is entirely possible to prepare to print on newsprint without image data, since a rotary-press litho plate can be made simply by painting with oils and a brush. In purest principle a series of posters or even an entire "newspaper" can be prepared and printed in that way. Since the interpretation of the term "image data", in the Official Action, is extremely literal, it is appropriate to counterbalance that interpretation by a broad understanding of "newspaper".

If the Examiner would care to suggest wording to use in place of "image data", so as to pursue the fundamental thrust and objectives of the invention as disclosed — rather than tangential and hypothetical topics such as introduced by the Official Actions — the Applicants' representative would be very happy to discuss such specific wording.

(b) "Printing" — It is also said in the Official Action (eighth line from bottom of page 2) that "clearly some printing occurs in the device taught by Ohno". Applicants respectfully point out that there is no argument on record about whether Ohno prints or has a printing apparatus — only whether "Ohno's cited Fig. 1" is a diagram of an apparatus for printing.

This point was raised only because the previous Action had, in fact, specifically cited Ohno's Fig. 1. Applicants

respectfully submit that the question of whether there is "printing" has never been at issue.

Thus the true issue is whether Ohno's "printing" is "incremental" printing and/or performed with a "multielement printing array". This is taken up in the body of this paper, in the sections labeled "(1)" and "(2)" respectively.

(c) "Structural difference" — In the Official Action it is also said (top of page 3) that claim recitations must provide or at least "result in a structural difference . . . in order to patentably distinguish" First, this argument on its face is without authority, since the *Kropa* decision, actually cited in the same Official Action, expressly authorizes patentable distinction to reside in functional language — even within the claim preamble.

Second, Applicants' claims do indeed recite structural differences relative to Ohno — even though the Official Action minimizes those differences by interpreting the claim language in ways that Applicants did not intend, and that sidestep major distinctions. This point is clarified in the body of this paper, above, in the discussions of "incremental" printing and "multielement printing array".

(d) "Mere supposition and speculation" — In the Official Action it is further argued (near bottom of page 3) that Applicants' statement that Ohno's plates carry and transfer entire images "in just one single unitary step, at each rotation" is "mere supposition and speculation on the part of Applicant." This argument is inconsistent with the extensive discussion of conventional printing-plate use that immediately precedes it, under the introduction, "As is well-known in the art".

With respect, the Commissioner cannot have it both ways: either the process of printing with offset-litho plates is well known in the art, or it is not. Applicant submits that the truth of the matter is that it is well known in an art — but it is not in the relevant art of incremental printing with multielement printing arrays for each color.

(e) Patentable weight based on preamble — In the paragraph bridging pages 3 and 4 of the Action, it is further argued:

"A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process of the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone."

In the Action, citations follow to *Hirao and Kropa*. In regard to these cited cases, it is believed (for the reason set forth below) that actually there is no issue applicable to the present case.

More specifically, the claim particularly at issue (see paragraph bridging pages 3 and 4 of the Official Action) is claim 1. In claim 1 the preamble and body recitations simply and strongly reenforce each other, as they respectively read (emphasis added) :

"printing . . . by construction from individual marks formed in a pixel grid"

and

"at least one multielement incremental-printing array".

These two recitations first state the character of incremental printing, and then expressly state both the presence and one preferred mechanism for implementing such printing.

The rule of both these decisions, however, is believed to be misused here. *Kropa* makes clear that the language in preamble is available to the Applicant for use whenever the body of the claim is insufficient to confer patentable weight.

Thus *Kropa* teaches that the preamble is available as Applicant's shield, to protect against the Commissioner's improperly broad reading of a claim so that the claim can be defeated. *Hirao* confirms this by showing what happens when the Commissioner attempts to commandeer the preamble as his own sword, to overly broaden a claim for the purpose of defeating the claim.

That is to say, *Hirao* stood for an effort by the Commissioner to write the elements of the claimed combination out of the claim. If successful, this reading would have subordinated the specific recitations in the claim body to the general recitations in the preamble — and this the CCPA forbade. As always (or virtually always) the specific controls the general rather than vice versa; but this happens only if the two are actually in conflict.

Lest these two cases seem to be inconsistent or otherwise confusing, Applicant respectfully submits that the rule about preambles is actually elementary: a preamble is simply part of a claim — most commonly a part that either:

- (1) defines the context or environment of the claim, and/or
- (2) establishes an overarching general function or purpose of the claim.

That's it.

Thus the preamble can neither be ignored (as improperly attempted in *Kropa*) nor read as dominating or controlling all the rest of the claim (as improperly attempted in *Hirao*). Rather, the two must be read with an intelligent balanced un-

derstanding of the relationships between the stated context or purpose and the recited limitations of a claimed combination.

Philosophically speaking, the writer believes that at least some popularly promoted distinctions about the relative roles of preamble and claim body are actually artificial, and in the end must fail. Also, perhaps in purest principle it is possible for recitations in preamble to operate against an *ex parte* Applicant, but that clearly did not happen in either *Hirao* or *Kropa*.

In *Hirao* the decision came down for the Applicant, whereas in the *Kropa* case the posture of the matter was *inter partes* — namely, an interference. In the latter kind of situation, where two different inventors are in competition for the same subject matter, parsing of preamble vs. claim body may perhaps be proper and helpful to resolve the competition.

(f) "Single unitary plate" — In the paragraph bridging pages 4 and 5, the Official Action proposes that the rotary "cylinders" are also not unitary because they can carry images made up of millions of dots. The reference to the "single unitary plate" is not a reference to the image carried thereby, or to the dots that make up the image — but strictly to the independently functioning and independently controlled multiple printing elements (nozzles, dot-matrix pins, etc.) that characterize a representative incremental printer.

The Applicants' representative sincerely hopes that the foregoing discussion will be helpful to mutual understanding.

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